Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of the Commission's Rules	)	ET Docket No. 96-102
to Provide for Unlicensed NII/SUPERNet	)	RM-8648
Operations in the 5 GHz Frequency Range	)	RM-8653

COMMENTS OF THE CONSUMER ELECTRONICS MANUFACTURERS ASSOCIATION

The Consumer Electronics Manufacturers Association ("CEMA"), a sector of the Electronic Industries Association, hereby submits the following comments in response to the Notice of Proposed Rulemaking ("*Notice*") which the Commission issued in the above-captioned proceeding on May 6, 1996.[1] In its *Notice*, the Commission has solicited comment on whether to allow a new category of unlicensed equipment, so-called NII/SUPERNet devices, to operate in the 5.15-5.35 GHz and 5.725-5.875 GHz bands.[2] As set forth below, CEMA enthusiastically supports the proposed allocation of spectrum, which will permit the creation of wireless area networks ("LANs"). CEMA also supports: the Commission's proposal to subject these NII/SUPERNet devices to only minimum technical standards; the proposal of Apple Computer, Inc. ("Apple") to allow certain higher power operations; and the adoption of "Part 16" rules to more thoroughly protect these devices from interference. Each of these actions will facilitate

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[1] *See Amendment of the Commission's Rules to Provide for Unlicensed NII/SUPERNet Operations in the 5 GHz Range*, Notice of Proposed Rulemaking, ET Docket No. 96-102, FCC 96-193 (released May 6, 1996) [hereinafter "*Notice*"].

[2] *See id.* at ¶ 1.

the development of unlicensed "community networks" thereby significantly enhancing consumer access to the National Information Infrastructure ("NII").

I. INTEREST OF CEMA

CEMA is the principal trade association of the consumer electronics industry. CEMA members design, manufacture, import, distribute and sell a wide variety of consumer electronics equipment, including personal computers and various types of unlicensed communications devices. As evidenced by the Commission's tentative decision to allocate 5 GHz spectrum to unlicensed LANs, unlicensed communications devices are becoming increasingly prevalent in businesses and homes, and will become even more pervasive as technology advances. CEMA's member companies are actively involved in the development of such equipment. CEMA and its member companies have also been active in the development of voluntary standards for unlicensed devices and, where appropriate, have assisted the Commission in developing technical standards for codification in the Commission's rules.[3] CEMA and its members therefore have a significant interest in the outcome of this proceeding.

II. THE PUBLIC WILL BENEFIT GREATLY FROM THE PROPOSED ALLOCATION OF SPECTRUM AND FROM THE ADOPTION OF FLEXIBLE STANDARDS FOR NII/SUPERNet DEVICES

In the *Notice*, the Commission has identified many of the beneficial uses for which NII/SUPERNet technology is particularly well-suited. As the *Notice* points out, this technology will "offer new opportunities for providing advanced telecommunications services to educational

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[3] CEMA formerly was known as the Consumer Electronics Group of the Electronic Industries Association.

institutions, health care providers, libraries, businesses, and other users."[4] As the Wireless Information Networks Forum ("WINForum") and Apple -- whose rulemaking petitions prompted this proceeding -- have also made clear, this technology will support *ad hoc* networking not only within businesses and institutions, but also among end users of all types.[5] In this regard, NII/SUPERNet devices promise to bring the enormous benefits of wireless LAN technology to the consumer environment.

CEMA wholeheartedly agrees with these assessments of NII/SUPERNET technology. As the Commission has recently recognized, today's wireless communications devices are enormously important to the American public. Unlicensed radio devices "have the potential to benefit virtually every person and business in the nation,"[6] and to make an "important contribution" to the overall public welfare.[7] In particular, NII/SUPERNet devices have the unique potential to significantly reduce the costs of establishing broadband connections among users of all kinds, as well as to the NII.

The need for such low-cost connections is becoming increasingly important as the number of home computer users continues to rise. EIA's Market Research Department estimates that 40 percent of all U.S. households now have one or more personal computers, and approximately 16 percent of U.S. households have modems or fax/modems capable of receiving

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[4] *Id.* at ¶ 2.

[5] *See id.* at ¶¶ 3 & 5.

[6] *Allocation of Spectrum Below 5 GHz Transferred From Federal Government Use*, First Report and Order and Second Notice of Proposed Rule Making, 10 FCC Rcd 4769, 4786 (1995).

[7] *Amendment of Part 90 of the Commission's Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems*, Report and Order, 10 FCC Rcd 4695, 4714 (1995).

and delivering data. These figures, which reflect an unmistakable trend, will continue to climb. NII/SUPERNet devices will accelerate this growth by reducing the costs of communications.

CEMA also concurs in the Commission's tentative conclusion that the utility of this new technology -- and, more important, consumer choice -- will be maximized by adopting flexible rules governing the operation of NII/SUPERNet devices. More specifically, the Commission has proposed that these devices follow a basic "listen-before-talk" spectrum etiquette.[8] Such an etiquette should provide industry with a very useful starting point. CEMA, however, urges the Commission to allow industry to develop additional and/or alternate etiquettes. CEMA stands ready to work with equipment designers and manufacturers to develop consensus protocols which will maximize efficient use of the NII/SUPERNet bands. As the Commission is aware, EIA has been developing standards and transmission etiquettes for decades and, in the process, has acquired significant expertise in developing consensus solutions to technical issues among disparate industry interests. CEMA looks forward to lending its experience to industry efforts to ensure efficient use of this spectrum.

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[8] *See Notice* at ¶¶ 46 & 52.

II. "HIGHER POWER" NII/SUPERNet OPERATIONS WILL ENSURE THAT THE BENEFITS OF THIS TECHNOLOGY ARE WIDELY ENJOYED

In the *Notice*, the Commission has inquired whether it should limit peak EIRP of NII/SUPERNet devices to -10 dBW (0.1 watt) throughout the two bands and thus limit typical communications to distances of 50 to 100 meters, or whether it should partially accommodate Apple's proposal for longer range community networks by allowing the use of transmitter output powers up to one watt in the 5.725-5.875 GHz band. If higher power operations are allowed in the upper band, the Commission asks whether these operations should be licensed (and the underlying spectrum subject to auction).[9]

CEMA supports the use of higher power NII/SUPERNet devices, but opposes any licensing and, in particular, any auctioning of the NII/SUPERNet spectrum. The Commission should not deny consumers the added value of NII/SUPERNet units which can transmit at the higher power levels Apple has proposed. Although low-power NII/SUPERNet devices would enable consumers to communicate at a distance of a city block and thereby bring neighbors' homes within range of each other, higher power limits will allow consumers to extend their internetworking capabilities to locations 10 to 15 kilometers away. In rural and semi-rural areas, such higher power NII/SUPERNet devices will be essential. Just as NII/SUPERNet devices can facilitate communications among nearby businesses and institutions, higher power devices will extend these benefits to consumers in rural and semi-rural areas.

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[9] *See id.* at ¶¶ 47 & 56.

The *Notice* suggests that longer range community networks might increase interference potential and, if operated on an unlicensed basis, lead to inefficient use of the band.[10] The *Notice* thus asks whether longer range operations should be licensed and possibly subject to the Commission's auction procedures.[11] CEMA urges the Commission not to retreat from the sponsors' vision of NII/SUPERNet devices -- easy-to-use, low-cost, high-capacity networking devices. This vision, if realized, will allow the public to access the NII through inexpensive, yet powerful wireless connections. The Commission would frustrate the community networking goals of NII/SUPERNet devices if it were to impose a licensing obligation on these devices, particularly if that obligation were coupled with spectrum auctions.

To the extent that the Commission is concerned about interference, it should allow industry to address those concerns so that the vision of NII/SUPERNet community networking can be preserved. In this regard, CEMA pledges to use its standards-setting experience and resources to work with industry to develop, if necessary, unique spectrum etiquettes for high-powered NII/SUPERNet devices. The Commission should not assume that industry is incapable of successfully addressing interference concerns.

III. THE STATUS OF NII/SUPERNet DEVICES SHOULD BE UPGRADED TO A LEVEL COMMENSURATE WITH THEIR BENEFIT TO THE PUBLIC

In its initial petition for rulemaking, Apple suggested that the Commission establish new "Part 16" rules to govern NII/SUPERNet devices, *i.e.*, rules that would protect these unlicensed devices from interference. The *Notice* does not go that far. Rather, it proposes

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[10] *See id.* at ¶ 47.

[11] *See id.* at ¶¶ 55-56.

a "safe harbor" akin to that adopted in the Location Monitoring Service proceeding, PR Docket No. 93-61.[12] NII/SUPERNet devices would presumptively be deemed *not* to cause interference if they employed indoor antennas or outdoor antennas 15 meters or less above ground, but they would be subject to traditional Part 15 rules requiring them to accept harmful interference. The Commission, however, also asks whether NII/SUPERNet devices should be accorded "higher" regulatory status and whether the Commission has statutory authority to grant such status.[13]

The Commission has correctly recognized that additional steps -- beyond traditional Part 15 rules -- are necessary to ensure public confidence in this important, new use of radio spectrum. CEMA applauds the Commission for recognizing that the uncertainty inherent in "traditional" Part 15 status could restrain investment of otherwise available dollars into the development of NII/SUPERNet devices. Unless the Commission does more, however, NII/SUPERNet devices will remain, by regulatory design, second-class citizens in the RF environment. Under the Commission's proposal, users of NII/SUPERNet devices would be subject to interference and thus subordinated to other activities at any time. Given the increasingly intense competition for frequency, the Commission should send a clearer signal that the NII/SUPERNet spectrum will be preserved for unlicensed use.

More specifically, the Commission should upgrade the status of NII/SUPERNet devices by affording them co-primary status within the allocated bands. Upgrading the status of these devices will assure manufacturers of NII/SUPERNet equipment and the consumers that buy them that these devices will be afforded protection commensurate with the contribution they

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[12] *See* 47 C.F.R. § 90.361.

[13] *See Notice* at ¶ 60.

make to the public. By doing so, the Commission will eliminate the lingering uncertainty regarding the future of these devices which its regulatory framework creates.

In addition, the Commission should make clear that the NII/SUPERNet spectrum will be *the* spectral "home" for these types of devices, and that allocations for additional uses will not be considered. Giving NII/SUPERNet devices such a spectral home is absolutely essential to the future of these unlicensed devices in the development of the NII. The Commission has already taken similar steps with respect to personal communications services ("PCS") by making an exclusive allocation to unlicensed devices in the 1910-1930 MHz band. The benefits which unlicensed PCS -- by virtue of having its own allocation -- will bring to consumers will also flow from granting similar status to NII/SUPERNet devices. In this regard, the allocation of spectrum to NII/SUPERNet devices should be added to the Commission's Table of Allocations. Such actions will send a clear signal to the marketplace, as well as to other radio users, that the Commission intends to preserve the NII/SUPERNet bands for NII/SUPERNet devices.

Finally, the *Notice* asks whether the Commission has authority to elevate the status of unlicensed devices.[14] CEMA believes that the *Notice* is raising form over substance. In its recent decision creating a Family Radio Service ("FRS"), the Commission "licensed by rule" individual user operations. In other words, users of FRS devices do not have to obtain their own individual licenses, as long as they abide by the operational conditions set forth in the

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[14] *See id.*

Commission's rules.[15] If the Commission finds it necessary to justify elevating the regulatory status of NII/SUPERNet devices, CEMA recommends that the Commission follow the FRS model.

[15] *See Amendment of Part 95 of the Commission's Rules to Establish a Very Short Distance Two-Way Voice Radio Service*, WT Docket No. 95-102, FCC 96-215, at Appendix B (released May 15, 1996).

IV. CONCLUSION

For all of the reasons set forth above, CEMA urges the Commission to authorize the introduction of NII/SUPERNet devices in a way that maximizes consumer access to the NII with minimal regulation.

Respectfully submitted,

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